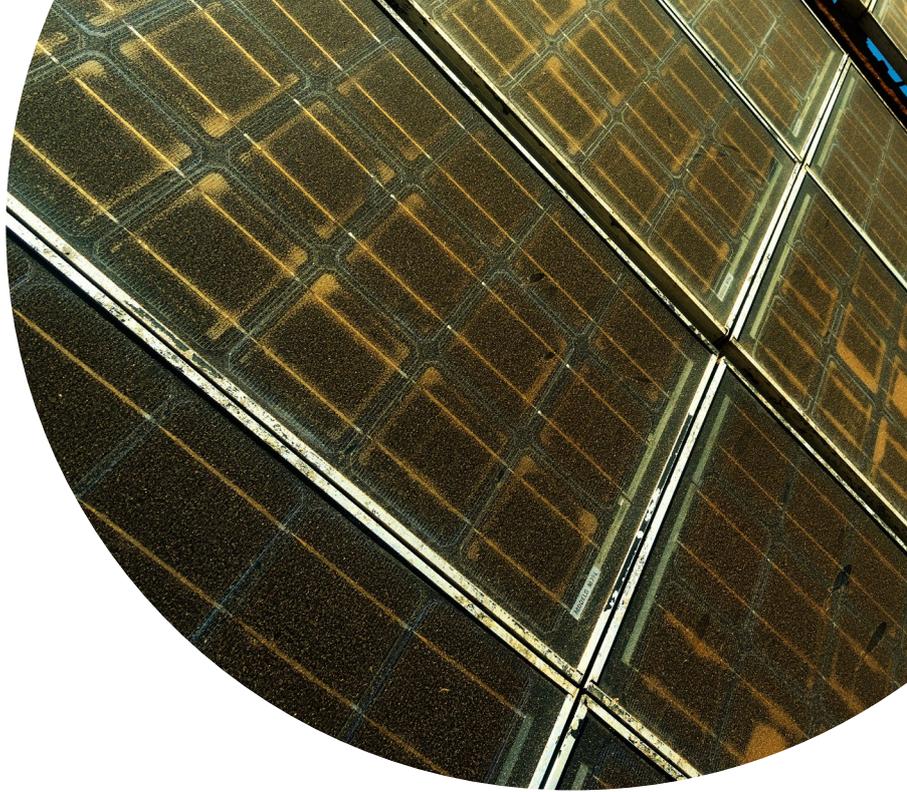




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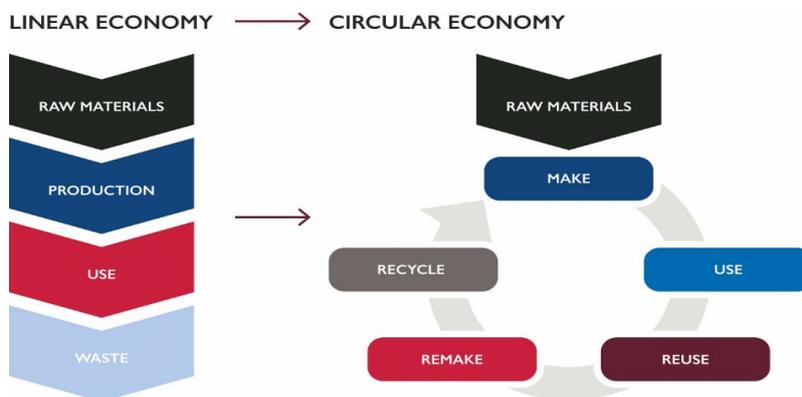


CLEAN ENERGY AND THE CIRCULAR ECONOMY

SCALING UP RENEWABLE ENERGY (SURE)

Obsolete renewable energy equipment is expected to grow exponentially over the next 30 years. Instead of damaged and decommissioned equipment piling up as waste, the life of these materials must be extended beyond their original use.

TRANSITIONING FROM A LINEAR ECONOMY TO A CIRCULAR ECONOMY



Source: Adapted from Wikimedia Commons by Catherine Weetman

In a circular economy, products, parts, and materials have multiple life cycles and re-entry points into the market as they are systematically recovered, repaired, reused, and remade. Where the linear economy disposes of waste in landfills, the circular economy creates multiple opportunities for

“return cycles” or “loops” that avoid disposal. This minimizes the use of resources and the creation of waste, pollution, and carbon emissions by keeping materials, products, equipment, and infrastructure in use for longer periods, thus improving the productivity of these resources.

	By 2050, solar PV panel waste could increase to 10 million tons annually .
	By 2023, approximately 14,000 wind turbine blades will be decommissioned, equivalent to about 50,000 tons
	By 2030, battery scrap waste could reach 2 million tons per year due to a growing demand of electric vehicles and stationary storage

Source: Bloomberg New Energy Finance, Wind Europe

MAKING THE CASE FOR A CIRCULAR ECONOMY

For renewable energy to be a truly clean power source, solar, wind, and battery equipment must be manufactured, deployed, and decommissioned in a responsible, safe, and sustainable way. A circular economy for renewable energy equipment can create a lower-emission supply chain for materials, reduce waste, create jobs, empower women, and strengthen communities.

[USAID’s Scaling Up Renewable Energy \(SURE\) program](#) produced an [opportunities assessment](#) to better understand the applications of the circular economy framework in renewable energy and achieve its multitude of benefits:



CLIMATE CHANGE: Circular economy strategies that rely on repairing and refurbishing products minimize our use of resources and can cut global greenhouse gas emissions by 39 percent, equivalent to 22.8 billion tons, according to the [World Resources Institute](#).



RESILIENT RENEWABLE ENERGY SUPPLY CHAIN: Moving away from a linear economy toward a more circular economy will support the development of shorter, more transparent, robust, and diverse clean energy supply chains that will reduce dependence on critical metals, and thus dependence on China, one of the world’s primary sources of critical metals used in renewable energy equipment. Shorter supply chains will also have a direct effect on reducing carbon emissions.



ECONOMIC GROWTH AND JOBS: According to the [International Labor Organization](#), a circular economy could create a net increase of six million jobs by 2030. A circular economy gives rise to a secondary market for repair, refurbishment, and trading of used equipment and components and creates sustainable businesses and local jobs for men and women, opportunities desperately needed in economies affected by the global pandemic. New business models focused on reusing, repairing, remanufacturing, and sharing offer significant innovation and employment opportunities.



INCLUSIVE AND JUST TRANSITION: A circular economy approach for renewable energy equipment can help USAID uplift lives, empower women, strengthen communities, and ensure that communities and workers benefit from the clean energy transition.

USAID'S ROLE IN TRANSFORMING THE CLEAN ENERGY INDUSTRY

USAID has an opportunity to transform the renewable energy industry into a more resilient, low-emissions global value chain for materials while powering economies, creating further use, and redirecting older products away from waste dumps and back into the market.

Building on the findings of [Clean Energy and the Circular Economy: Opportunities for Increasing the Sustainability of Renewable Energy Value Chains](#), SURE identified the following examples of pilot projects:

- **Identify partner countries requiring interventions using data on installed renewable energy capacity and average lifetimes.** USAID can also consider countries with ambitious renewable energy targets, strategies, and nationally determined contributions, recognizing that countries will need to adopt circular economy approaches to support the accelerated transition to clean energy.
- **Identify and convene stakeholders, assess risks, and develop a shared vision and roadmap with local partners that meets the needs of communities, the private sector, and the planet.** To spark a paradigm shift from a linear to a circular economy, USAID must increase awareness among stakeholders, including those from the waste management sector, and build institutional capacity.
- **Support the addition of circular economy considerations in renewable energy procurements** and develop standards across the supply chain and research that informs future designs, interventions, policies, and private sector initiatives.
- **Incentivize private industry to invest in recycling, repair, or reuse which are currently limited due to market conditions and regulatory barriers.** This can be done through a USAID-funded grant for a pilot project, prize, or challenge.
- **Develop tools, resources, and trainings** that help promote an inclusive and safe circular economy industry. USAID can help upskill workers in equipment triaging, repurposing, dismantling, recycling, and safe disposal while reinforcing health and safety standards.
- **Conduct risk assessments for hazardous materials, map stakeholders and develop an engagement strategy,** help develop regulatory frameworks and create trainings, tools, and resources.
- **Support the development of standards** to promote and ensure the quality, performance, safety, and technical viability of reused and refurbished products to encourage the orderly development of a high-quality market.
- **Conduct cost-benefit analyses to form a strong business case for a circular economy,** encouraging greater private sector uptake.

Partner with SURE to promote a circular economy by piloting and cultivating new business models, markets, sustainable practices, design innovations and policies. Contact Program Manager Amanda Valenta (avalenta@usaid.gov) or Sarah Lawson (slawson@usaid.gov).